

ATTORNEY DOCKET NO. 00-C-015 (STMI01-00015)
U.S. SERIAL NO. 09/656,985
PATENT

REMARKS

Claims 1–18 are pending in the present application. Claims 8–18 have been withdrawn from consideration.

Reconsideration of the claims is respectfully requested.

Restriction Requirement

The Applicant respectfully requests reconsideration of the restriction requirement. The Restriction Requirement mailed November 29, 2001 asserted that the method and device claims are distinct based on the contention that the device claims may be manufactured by a materially different process: specifically, that the integrated circuit devices may be packaged after being mounted on the circuit board.

Restriction is only proper where the claims are independent or distinct. MPEP § 806. In passing on questions of restriction, the claimed subject matter must be compared in order to determine distinctness and independence. MPEP § 806.01. Pending independent claim 1 does not recite packaging the integrated circuit, only that the integrated circuits each include a linear array of photosensors within a portion remaining exposed after packaging. Claims 2 and 6 recite packaging the integrated circuits, but do not specify whether the integrated circuits are packaged before or after being mounted on the circuit board. Accordingly, the restriction requirement has no basis in the claims.

ATTORNEY DOCKET No. 00-C-015 (STMI01-00015)
U.S. SERIAL NO. 09/656,985
PATENT

In addition, a process of making and the product made are distinct inventions only if: (A) the process as claimed is not an obvious process of making the product and can be used to make other and different products; and (B) the product as claimed can be made by another and materially different process. The Restriction Requirement asserts that packaging the integrated circuits after they are mounted on the circuit board is materially different than packaging the integrated circuits before they are mounted on the circuit board. However, Applicant respectfully traverses the assertion that packaging the integrated circuits before they are mounted on the circuit board is patentably distinct from packaging the integrated circuits after they are mounted on the circuit board.

Accordingly, Applicant respectfully requests withdrawal of the restriction requirement.

35 U.S.C. § 103 (Obviousness)

Claims 1–4 were rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 4,894,707 to *Yamawaki et al* in view of U.S. Patent No. 6,300,169 to *Weiblen et al* and U.S. Patent No. 6,252,252 to *Kunii et al*. This rejection is respectfully traversed.

In *ex parte* examination of patent applications, the Patent Office bears the burden of establishing a *prima facie* case of obviousness. MPEP § 2142; *In re Fritch*, 972 F.2d 1260, 1262, 23 U.S.P.Q.2d 1780, 1783 (Fed. Cir. 1992). The initial burden of establishing a *prima facie* basis to deny patentability to a claimed invention is always upon the Patent Office. MPEP § 2142; *In re Oetiker*, 977 F.2d 1443, 1445, 24 U.S.P.Q.2d 1443, 1444 (Fed. Cir. 1992); *In re Piasecki*, 745 F.2d 1468, 1472, 223 U.S.P.Q. 785, 788 (Fed. Cir. 1984). Only when a *prima facie* case of obviousness

ATTORNEY DOCKET NO. 00-C-015 (STMI01-00015)
U.S. SERIAL NO. 09/656,985
PATENT

is established does the burden shift to the applicant to produce evidence of nonobviousness. MPEP § 2142; *In re Oetiker*, 977 F.2d 1443, 1445, 24 U.S.P.Q.2d 1443, 1444 (Fed. Cir. 1992); *In re Rijckaert*, 9 F.3d 1531, 1532, 28 U.S.P.Q.2d 1955, 1956 (Fed. Cir. 1993). If the Patent Office does not produce a *prima facie* case of unpatentability, then without more the applicant is entitled to grant of a patent. *In re Oetiker*, 977 F.2d 1443, 1445, 24 U.S.P.Q.2d 1443, 1444 (Fed. Cir. 1992); *In re Grabiak*, 769 F.2d 729, 733, 226 U.S.P.Q. 870, 873 (Fed. Cir. 1985).

A *prima facie* case of obviousness is established when the teachings of the prior art itself suggest the claimed subject matter to a person of ordinary skill in the art. *In re Bell*, 991 F.2d 781, 783, 26 U.S.P.Q.2d 1529, 1531 (Fed. Cir. 1993). To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed invention and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. MPEP § 2142.

Independent claim 1 recites forming a linear photosensor array from a plurality of photo-sensor integrated circuits mounted with photosensors in alignment on a printed circuit board, with at least some leads soldered. Such a feature is not described by the cited references, taken alone or

ATTORNEY DOCKET No. 00-C-015 (STMJ01-00015)
U.S. SERIAL No. 09/656,985
PATENT

in combination. *Yamawaki et al* describes only an array of photosensors within a single integrated circuit for a video recording device, and does not describe multiple integrated circuits mounted on a printed circuit board with the photosensor arrays aligned.

The cited portion of *Weiblen et al* depicts a lead grid with an array of lead frames for mass-production, concurrent packaging of multiple pressure sensor integrated circuits, but does not describe or subjecting the pressure sensors to any particular effort at intentional alignment when mounted on the lead frame. *Weiblen et al*, Figure 1, column 2, lines 44–53. More significantly, *Weiblen et al* does not describe mounting the packaged integrated circuits on a circuit board. In fact, *Weiblen et al* is not an analogous reference to the claimed invention. In order to rely on a reference as a basis for an obviousness rejection, the rejection must be analogous to the claimed invention—that is, either within the field of endeavor of the invention or reasonably pertinent to the problem with which the invention is concerned. MPEP § 2141.01(a). *Weiblen et al* does not relate to photosensors, formation of long photosensors by mounting shorter photosensors in alignment, or even mounting integrated circuits on circuit board. *Weiblen et al* relates only to mass-production packaging of pressure sensors.

Kunii et al describes one light emitting and one light sensing element 23 and 24 mounted side-by-side. *Kunii et al*, Figures 1 and 9–10; column 7, lines 40–56 and column 12, lines 1–14. *Kunii et al* does not describe integrated circuits containing an array of photosensors. *Kunii et al* also does not describe any particular alignment for the two elements 23 and 24, nor is any need for such

ATTORNEY DOCKET NO. 00-C-015 (STM01-00015)
U.S. SERIAL NO. 09/656,985
PATENT

alignment apparent since the groove 27 serves to reflect incident light onto the light receiving face of element 24 and light emitting element 23 emits in all directions. *Kunii et al*, column 7, line 57 through column 8, line 21.

The final Office Action states:

[A]s explained above, Weiblen et al and Kunii et al teach using a conventional mounting such that the ICs are in an alignment on the leadframe (Weiblen et al, Fig. 1) and circuit board (Kunii et al: Fig. 10) respectively. Furthermore, Kunii et al teach using a conventional soldering where the leads of a plurality/array of optical IC devices are soldered to a circuit board 948 in Fig. 9).

Paper No. 6, pages 4–5. Neither *Weiblen et al* nor *Kunii et al* describe an particular alignment for the respective structures, and in particular do not describe alignment of sufficient precision to align linear arrays of photosensors. To the extent that the Office Action relies solely on the depictions in the drawings, it is well-established that measurement of patent drawings may not be relied upon to determine if dimensional or similar structural claim limitations are distinguishable. *In re Wilson*, 312 F.2d 449, 454, 136 U.S.P.Q. 188, 192 (CCPA 1963) ("Patent drawings are not working drawings . . ."); *In re Reynolds*, 443 F.2d 384, 389, 170 U.S.P.Q. 94, 98 (CCPA 1971) ("[A] patent drawing . . . does not have to be to any particular scale."); *In re Chitayat*, 408, F.2d 475, 478, 161 U.S.P.Q. 224, 226 (CCPA 1969) ("In view of the absence in [the] specification of any written description of any quantitative value . . . , arguments based on mere measurement of the drawings appear to us to be of little value"). A patent drawing does not define the precise proportions of the elements depicted and

ATTORNEY DOCKET No. 00-C-015 (STMI01-00015)
U.S. SERIAL NO. 09/656,985
PATENT

thus may not be relied on to show particular distances or sizes when the specification is completely silent in that respect. *In re Heinle*, 342 F.2d 1001, 1007, 145 U.S.P.Q. 131, 136 (CCPA 1965).

Independent claim 1 also recites that at least some leads for each integrated circuit are soldered to the circuit board. In an exemplary embodiment, the integrated circuits are mounted on lead frames (using a lead frame grid and then singulating), preferably packaged (encapsulated), then mounted on the printed circuit board with at least leads on one side being soldered. Such a feature is not shown or suggested by the cited references. None of the cited references teaches mounting integrated circuit die on lead frames, then mounting the die and lead frames on a circuit board with photosensors in alignment and soldering at least some of the leads.

Claim 2 recites additional details of packaging the integrated circuit die, including wire bonding and encapsulation, prior to mounting the packaged integrated circuits on the circuit board with the photosensors in alignment. Such a feature is not shown or suggested by the cited references.

Claims 3 and 4 recite details of packaging the integrated circuits so that the photosensors remain exposed, by utilizing a mold with a surface contacting the photosensor array surface. Such a feature is not shown or suggested by the cited references.

Therefore, the rejection of claims 1–4 under 35 U.S.C. § 103 has been overcome.

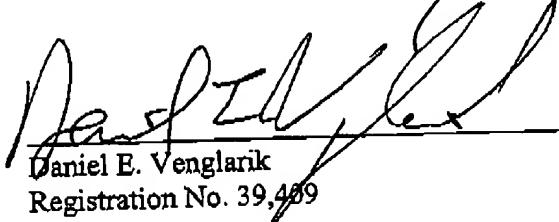
ATTORNEY DOCKET No. 00-C-015 (STMI01-00015)
U.S. SERIAL NO. 09/656,985
PATENT

If any issues arise, or if the Examiner has any suggestions for expediting allowance of this Application, the Applicant respectfully invites the Examiner to contact the undersigned at the telephone number indicated below or at dvenglarik@davismunck.com.

The Commissioner is hereby authorized to charge any additional fees connected with this communication or credit any overpayment to Deposit Account No. 50-0208.

Respectfully submitted,

DAVIS MUNCK, P.C.



Daniel E. Venglarik
Registration No. 39,489

Date: 1-13-03

P.O. Box 802432
Dallas, Texas 75380
(972) 628-3621 (direct dial)
(972) 628-3600 (main number)
(972) 628-3616 (fax)
E-mail: dvenglarik@davismunck.com

FAX RECEIVED

JAN 13 2003

TECHNOLOGY CENTER 2800

Page 12 of 12